

**WEST**[Help](#)[Logout](#)[Interrupt](#)[Main Menu](#)[Search Form](#)[Posting Counts](#)[Show S Numbers](#)[Edit S Numbers](#)[Preferences](#)[Cases](#)**Search Results -**

Term	Documents
AIKENYL DWPLTDBD.FPAB.JPAB.USPT.	178035
AIKENYLS DWPLTDBD.FPAB.JPAB.USPT.	1475
(6 AND AIKENYL) USPT.JPAB.FPAB.DWPLTDBD.	3
(6 AND AIKENYL) USPT.JPAB.FPAB.DWPLTDBD.	3

US Pre-Grant Publication Full-Text Database

Database:

Search:

[Refine Search](#)

Recall Text

[Clear](#)**Search History**DATE: Friday, August 09, 2002   [Printable Copy](#)   [Create Case](#)**Set Name Query**

side by side

**Hit Count Set Name**

result set

*DB USPT.JPAB.FPAB.DWPLTDBD, PLUR YES; OP ADJ*

17	16 and alkenyl	3	17
16	15 and negative	3	16
15	us-5980778-S did. or us-5866035-S did. or us-5798058-S did. or us-5582764-S did. or us-5380462-S did. or us-5204019-S did.	15	15
14	US-6066268-S did.	2	14
13	US-6395353-S did.	2	13
12	US-6217953-S did.	2	12
11	WO-9827036-S did.	2	11

END OF SEARCH HISTORY

**WEST**

## Generate Collection

LIT: Entry 1 of 3

File: 10081

DOCUMENT IDENTIFIERS: 10081-4-1-4-A

TITLE: Liquid crystal composition and liquid crystal display element comprising the same

## Abstract Text (1):

The invention presents an excellent liquid crystal display composition possessing a negative dielectric anisotropy, comprising one or more compounds selected from the group consisting of formulas I, II, III, IV and V, ##STR1## where R<sup>1</sup> and R<sup>2</sup> are alkyl, alkoxyalkyl, mono- or difluoroalkyl, or alkenyl, with each group having 2 to 7 carbon atoms; R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, and R<sup>6</sup> denote 1 or 1 with proviso that R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup> or R<sup>6</sup> is 1 or 2; a six membered ring expressed by A, B, or C respectively represents any one of trans-1-sila-1,4-cyclohexylene, trans-4-sila-1,4-cyclohexylene, or trans-1,4-sila-cyclohexylene group; L represents F<sub>2</sub> and L<sup>1</sup> and L<sup>2</sup> represent H or F; n is 1, 1, 1, 1, 1, and P<sup>1</sup> and P<sup>2</sup> is H, P<sup>1</sup> and P<sup>2</sup> is P<sup>1</sup> and P<sup>2</sup>, in which at least one compound thereof contains trans-1-sila-1,4-cyclohexylene group or trans-4-sila-1,4-cyclohexylene group.

## Brief Summary Text (8):

The action modes of the reflection type liquid crystal display include DS (dynamic scattering) mode, ECB (electrically controlled birefringence) mode, CH (guest host) mode, and others, and in certain types it is required to use a liquid crystal material with a negative value of  $\Delta\epsilon$  (dielect. cons. - dielectric constant anisotropy).

## Brief Summary Text (9):

Hitherto known independent liquid crystal compounds with negative  $\Delta\epsilon$  (elect. cons. values include: ##STR2## where R<sup>1</sup> and R<sup>2</sup> are represented by an alkyl or alkoxy group with each group having 1 to 10 carbon atoms (Japanese Patent Provisional Publication No. 51-26694), ##STR3## where R<sup>1</sup> and R<sup>2</sup> are an alkyl or alkoxy group with each group having 1 to 10 carbon atoms; the sum of g and r equals 1 or 2; L represents a single bond, CH<sub>2</sub>sub.1, CH<sub>2</sub>sub.2, CH<sub>2</sub>sub.3, CH<sub>2</sub>sub.4, or CO<sub>2</sub>sub.1; X<sub>1</sub>sub.1 and X<sub>1</sub>sub.2 represent H, F, Cl, Br, or CN (Japanese Patent Provisional Publication No. 50-199643), ##STR4## where R<sup>1</sup> and R<sup>2</sup> are non-substituted or substituted alkyl groups with each group having 1 to 10 carbon atoms, Q is CO or CH<sub>2</sub>sub.2 (Japanese Patent Provisional Publication No. 50-303436), and other compounds having a partial structure with positions 2 and 3 of a 1,4-substituted phenylene group substituted by F, CN, etc., and other compounds having a partial structure with axial position 1 or 4 of a 1,4-substituted cyclohexylene group substituted by F, CN such as ##STR5## (Japanese Patent Provisional Publication No. 50-226695).

## Brief Summary Text (10):

We have already filed applications related to hitherto unknown liquid crystal compounds containing silacyclhexane rings in their molecular structure (see the list of the references at the end). The composition of the present invention relates to a mixture composed of one or more of these liquid crystal compounds only, or containing them as part of a mixture components, having a negative  $\Delta\epsilon$  (dielect. cons. - dielectric constant anisotropy).

## Brief Summary Text (11):

The composition of the present invention comprises one or more compounds selected from the group consisting of formulas I, II, III, IV and V, and at least one compound selected from the group consisting of a six membered ring expressed by A, B, or C respectively represents any one of trans-1-sila-1,4-cyclohexylene, trans-4-sila-1,4-cyclohexylene, or trans-1,4-sila-cyclohexylene group; L represents F<sub>2</sub> and L<sup>1</sup> and L<sup>2</sup> represent H or F; n is 1, 1, 1, 1, 1, and P<sup>1</sup> and P<sup>2</sup> is H, P<sup>1</sup> and P<sup>2</sup> is P<sup>1</sup> and P<sup>2</sup>, in which at least one compound thereof contains trans-1-sila-1,4-cyclohexylene group or trans-4-sila-1,4-cyclohexylene group.

alkyl group having 2 to 7 carbon atoms, an alkoxyalkyl group having 2 to 7 carbon atoms, a mono or difluoroalkyl group having 2 to 7 carbon atoms, or an alkenyl group having 2 to 7 carbon atoms; h, i, j, and k denote 1 or 2 with the proviso that i + j + k is 1, 2, or 3; a six membered ring expressed by A, B, and C respectively represents any one of trans 1,4-cyclohexylene, trans 4,4'-bicyclohexylene, or trans 1,4-cyclophenylene group; L represents F, and L.sup.1 and L.sup.2 represent H or F; n is 0, 1 or 2; and R.sup.1 represents H, R.sup.1 or OR.sup.1.

Brief Summary Text: 21 :

Among operation modes of reflection type liquid crystal displays using a liquid crystal material with a negative dielectric constant anisotropy, an active matrix system may be employed as the driving mode. In such a case, a signal voltage retention characteristic is required for maintaining good image display quality. This signal voltage retention characteristic means the degree of lowering of the signal voltage applied to the TFT pixels containing liquid crystal in a given frame period. Therefore, without lowering of the signal voltage, that is, when the voltage retention percentage is 100%, the configuration of liquid crystal molecules remains unbroken, and the contrast does not fade. This voltage retention characteristic is also affected by the environment in which a liquid crystal panel is used, and the period during which this characteristic is remains excellent tends to be shorter when exposed to high intensity light such as liquid crystal panels used for projection, or to high temperatures as liquid crystal panels in automobiles.

Brief Summary Text: 28 :

(b) Alkenyl groups with 2 to 7 carbon atoms, that is:

Brief Summary Text: 46 :

(h) Of alkenyl groups with 2 to 7 carbon atoms:

Brief Summary Text: 64 :

The liquid crystal composition of the present invention is characterized by negative values for the dielectric constant anisotropy (DELTA.di elect cons.), its absolute value (vertline.DELTA.di elect cons.vertline) being larger than that of the composition composed of conventional liquid crystal compounds alone, high voltage retention, and relatively low viscosity.

Detailed Description Text: 11 :

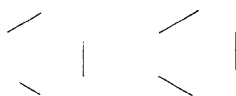
Thus, the mixed composition of the above three compounds possesses a negative dielectric constant anisotropy (DELTA.di elect cons.) having the larger absolute value than the respective values for two pure compounds, and presents the intended effects of the present invention.

CLAIMS:

1. A liquid crystal composition comprising two or more compounds selected from the group consisting of formulas I, III, IV and V, ##STR1## where R.sup.1 is an alkyl group having 2-7 carbon atoms, an alkoxyalkyl group having 2-7 carbon atoms, a mono or difluoroalkyl group having 2-7 carbon atoms, or an alkenyl group having 2 to 7 carbon atoms; h, i, j, and k denote 1 or 2 with the proviso that i + j + k is 1, 2, or 3; a six membered ring expressed by A, B, and C respectively represents any one of trans 1,4-cyclohexylene, trans 4,4'-bicyclohexylene, or trans 1,4-cyclophenylene group; L represents F, and L.sup.1 and L.sup.2 represent H or F; n is 0, 1 or 2; and R.sup.2 represents H, R.sup.1 or OR.sup.1, wherein at least two compounds thereof contains trans 1,4-cyclohexylene group or trans 4,4'-bicyclohexylene group.

4. A liquid crystal composition comprising one or more compounds selected from the group consisting of: ##STR2## wherein R.sup.1 is an alkyl group having 2-7 carbon atoms, an alkoxyalkyl group having 2-7 carbon atoms, a mono or difluoroalkyl group having 2-7 carbon atoms, or an alkenyl group having 2-7 carbon atoms; h, i, j, and k denote 1 or 2 with the proviso that i + j + k is 1, 2, or 3; and the formula A, B, and C is a six membered ring expressed by A, B, and C respectively represents any one of trans 1,4-cyclohexylene, trans 4,4'-bicyclohexylene, or trans 1,4-cyclophenylene group; L represents F, and L.sup.1 and L.sup.2 represent H or F; n is 0, 1 or 2; and R.sup.1 represents H, R.sup.1 or OR.sup.1, wherein at least two compounds thereof contains trans 1,4-cyclohexylene group or

[illegible]



```

chain nodes :
  19 20 21 22
ring nodes :
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
chain bonds :
  2-12 3-19 4-20 9 22 17-21 21-22
ring bonds :
  1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15
  15-16 16-17 17-18
exact/norm bonds :
  9-22 13-14 13-18 14-15 15-16 16-17 17-18 17-21 21-22
exact bonds :
  2-12 3-19 4-20
normalized bonds :
  1-2 1-6 2-3 3-4 4-5 5 6 7-8 7-12 8-9 9-10 10-11 11-12
  
```

G1:C,O

```

Match level :
  1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
  12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:CLASS 20:CLASS
  21:CLASS 22:CLASS
  
```

Page 1 of 1

LG ANSWER 1 OF 4 CARLUS PATENT FIVE APP  
 AN 2001484943 CARLUS  
 TI Nematic liquid crystal media and method of using same  
 IN Melander, Thomas Moritz; Melander, Thomas; Melander, Matthias  
 PA Merck Patent G.m.b.H., Germany  
 SC Ger. Offen., 43 pp.  
 CIPEN: G013AF

DT Patent  
 LA Japanese

PANLONT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 200201474	A2	2002.01.14	JP 2001 09474	2001.09.04
PPAI	DE 2000 1006494	A	2000.10.10		

LG ANSWER 2 OF 4 CARLUS PATENT FIVE APP

AN 2001484943 CARLUS

DN 130103167

TI Liquid crystal mixture suitable for active matrix liquid crystal display  
 using ECB electrically controlled birefringence effects

IN Klaser, Matthias; Kaser, Matthias; Kaser, Matthias; Kaser, Matthias;  
 Diehl, Hans-Peter; Diehl, Hans-Peter; Diehl, Hans-Peter; Diehl, Hans-Peter

PA Merck Patent G.m.b.H., Germany

SC Ger. Offen., 43 pp.

CIPEN: G013BX

DT Patent

LA German

PANLONT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 1006494	A1	2000.10.10	DE 2000 1006494	2000.10.10
WO	2002051963	A1	2002.07.04	WO 2001 EP1089	2001.09.05

WI: AR, AG, AH, AM, AN, AO, AP, AQ, AS, AT, AU, AV, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UV, UW, UX, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ

PPAI DE 2000 1006494 A 2000.10.10

OS MAPPAT 137:70567

LG ANSWER 3 OF 4 CARLUS PATENT FIVE APP

AN 2001484943 CARLUS

DN 130103167

TI Alkenyl compound having negative refractive anisotropy and liquid crystal  
 mixture suitable for liquid crystal display

IN Bremer, Matthias; Bremer, Matthias; Bremer, Matthias; Bremer, Matthias

PA Merck Patent G.m.b.H., Germany

SC Ger. Offen., 43 pp.

CIPEN: G013BX

DT Patent

LA German

PANLONT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 1006494	A1	2000.10.10	DE 2000 1006494	2000.10.10
JP	200201474	A1	2002.01.14	JP 2001 09474	2001.09.04
PPAI	DE 2000 1006494	A	2000.10.10		

OS MAPPAT 137:70567

L6 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2002 ACS  
 AN 2000:15704 CAPLUS  
 DN 132:71465  
 TI Liquid crystal mixture with negative dielectric anisotropy for liquid crystal display  
 IN Klaser, Michael; Weiler, Hans-Joerg; Fiedler, Rainer; Richter, Matthias  
 PA Merck Patent GmbH, Germany  
 SO Eur. Pat. Appl., 16 pp.  
 CODEN: EXXXLW  
 DT Patent  
 LA German  
 FAN.GNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1146104	A2	20010111	EP 2001 107879	20010411
	EP 1146104	A3	20000130		
	B: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, NO, PT, IE, SI, LT, LV, FI, PO				
	DE 10112958	A1	20011122	DE 2001 1012958	20010317
	US 20020114613	A1	20020227	US 2001 883743	20010411
	JP 2001354987	A2	20011224	JP 2001 116758	20010417
BPAI	DE 2001 1011584	A	20010414		
CS	MAPPAT 132:71465				

L6 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2002 ACS  
 AN 2000:15704 CAPLUS  
 DN 132:71465  
 TI Liquid crystal composition for active matrix liquid crystal display based on ECB (electrically controlled birefringence) effect  
 IN Heckmeier, Michael; Bremer, Matthias; Klement, Dagmar  
 PA Merck Patent GmbH, Germany  
 SO Ger. Offen., 16 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.GNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19827627	A1	20001104	DE 1982 19827627	19990617
	JP 2000238586	A2	20010218	JP 1999 144947	19990631
	US 6217963	B1	20010417	US 1999 543472	19990631
BPAI	DE 1998 19827627	A1	19980617		
CS	MAPPAT 132:71465				

L6 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2002 ACS  
 AN 1998:404009 CAPLUS  
 DN 128:100307  
 TI Preparation of dila. (phenyl) derivatives as liquid crystal compounds for liquid crystal composition  
 IN Hato, Takashi; Matsui, Shiroshi; Miyawaka, Harutoshi; Takashita, Fusayuki; Nakagawa, Eisuke  
 PA Chisso Corp., Japan; Hato, Takashi; Matsui, Shiroshi; Miyawaka, Harutoshi; Takashita, Fusayuki; Nakagawa, Eisuke  
 SO JPT Int. Appl., 11 pp.  
 CODEN: EXXXLW  
 DT Patent  
 LA Japanese  
 FAN.GNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	W 98/114	A1	19980114	W 98/114	19980114
	B: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, NO, PT, IE, SI, LT, LV, FI, PO				
	C: JP, KR, CN, TW, AU, NZ, BR, CA, CO, EC, EG, HK, IL, IN, JP, KR, LU, NL, NO, NZ, PT, SE, SI, SK, TR, US, ZA				







nematic liq. crystal compo. with low viscosity and high neg.  
anisotropy of dielec. const. for displays

LIQUID CRYSTAL

nematic liquid crystal compo. with low viscosity and high neg.  
anisotropy of dielec. const. for displays

17 67889-41-6D, mixts. contg. 67889-4-4D, mixts. contg. 73288-60-4D,  
mixts. contg. 72384-40-7D, mixts. contg. 72776-44-8D, mixts. contg.  
81444-44-11, mixts. contg. 8214-4-41, mixts. contg. 84086-46-1D,  
mixts. contg. 84757-46-7D, mixts. contg. 8484-40-4D, mixts. contg.  
89070-51-1D, mixts. contg. 8938-40-11, mixts. contg. 8941-46-7D,  
mixts. contg. 8941-71-11, mixts. contg. 8941-84-4D, mixts. contg.  
96024-41-8D, mixts. contg. 96024-41-1D, mixts. contg. 96024-42-1D,  
mixts. contg. 118788-30-4D, mixts. contg. 118788-30-1D, mixts. contg.  
123660-48-6D, mixts. contg. 124728-48-9D, mixts. contg.  
124728-61-1D, mixts. contg. 124728-67-61, mixts. contg. 126318-25-1D,  
mixts. contg. 126788-34-7D, mixts. contg. 131790-57-31, mixts. contg.  
133366-39-9D, mixts. contg. 134390-38-1D, mixts. contg. 181369-18-4D,  
mixts. contg. 189750-98-9D, mixts. contg. 97012-46-4D, mixts.  
contg. 252960-30-8D, mixts. contg. 25314-16-4D, mixts. contg.  
254676-69-6D, mixts. contg. 321308-68-71, mixts. contg. 321308-89-8D,  
mixts. contg. 321318-95-4D, mixts. contg. 321318-98-7D, mixts. contg.  
321308-98-9D, mixts. contg. 321318-13-9D, mixts. contg. 321318-14-1D,  
mixts. contg. 321395-36-2D, mixts. contg. 329014-46-4D, mixts.  
contg. 323278-44-61, mixts. contg. 323278-45-7D, mixts. contg.  
323575-46-8D, mixts. contg. 323575-48-3D, mixts. contg. 329014-46-2D,  
mixts. contg. 329014-47-3D, mixts. contg. 329014-48-4D, mixts. contg.  
329014-49-5D, mixts. contg. 329014-50-8D, mixts. contg. 329014-51-9D,  
mixts. contg. 335165-48-1D, mixts. contg. 335165-23-2D, mixts. contg.  
335165-33-8D, mixts. contg. 335165-37-2D, mixts. contg. 335165-38-3D,  
mixts. contg. 335165-42-9D, mixts. contg. 335165-44-1D, mixts. contg.  
335165-47-4D, mixts. contg. 362053-47-2D, mixts. contg. 362053-48-3D,  
mixts. contg. 362053-49-4D, mixts. contg. 362053-50-9D, mixts. contg.  
362053-54-1D, mixts. contg. 362053-55-2D, mixts. contg. 362053-56-3D,  
mixts. contg. 362053-57-4D, mixts. contg. 362053-58-5D, mixts. contg.  
362053-59-6D, mixts. contg. 362053-60-9D, mixts. contg. 362053-61-0D,  
mixts. contg. 362053-62-1D, mixts. contg. 362053-63-2D, mixts.  
contg. 362053-64-3D, mixts. contg. 362053-65-4D, mixts. contg.  
362053-66-5D, mixts. contg. 362053-67-6D, mixts. contg. 362053-68-7D,  
mixts. contg. 362053-69-8D, mixts. contg. 362053-70-1D, mixts. contg.  
362053-71-2D, mixts. contg. 362053-72-3D, mixts. contg.  
362053-73-4D, mixts. contg.

FL. DEV. Device component use: TWFF. Uses

nematic liq. crystal compo. with low viscosity and high neg.  
anisotropy of dielec. const. for displays

19 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2002 ACS

AN 2001:288927 CAPLUS

LN 134:318783

TI Nematic liquid crystal compositions and liquid crystal display devices

IN Yanai, Michiko; Kato, Yumihiko; Nakagawa, Etsuo

PA Onoda Corp., Japan

SP Jpn. Pat. Tokkyo Koho 2000 pp.

COEN: JPXXAF

FT Patent

LA Japanese

LC ICM 029K019 42

ICS 029K019 34; G02F001 13

CC 74-13 Radiation Chemistry, Photochemistry, and Photo-graphic and Other  
Rephotographic Processes

Section does reference to 14-13-13

PAN:2001

PATENT N. 2001-141F

APP. PAT. N. 2001-141F

11 01-141141-1 A. 1. 14.1 01-141141-1 01-141141-1

[illegible][illegible]

Trial	Control (n = 10)	MCI (n = 10)	AD (n = 10)
1	95	85	75
2	95	85	75
3	95	80	70
4	95	75	65
5	95	75	65

[illegible]

24

AB The compns. contain 1 ignored, 1 compns. selected from I and II ignored, 1 compns. selected from III and IIII. R1, R2, R3 = C1-10 alkyl, C2-10 **alkenyl**; R4, R5 = C1-10 alkyl, alkoxy, C2-10 **alkenyl**; Z1-5 = single bond, CH=CH; A1 = 1,4 phenylene, trans 1,4 cyclohexylene; A2 = fluoro 1,4 phenylene, trans 1,4 cyclohexylene. The compns. may also contain other cyclohexyl compns. given in Markush structures. Liq. crystal display devices comprising the above stated compns. are also claimed. The compns. have low viscosity and ideal  $\Delta T_{\Delta n}$  depending on the cell thickness.

The compns. contain: 1. 1gtoreq.1 compds. selected from I and II  
2. 1gtoreq.1 compds. selected from III and IV. R1, R3, R5 = C1-10 alkyl,  
C2-10 **alkenyl**; R2, R4, R6 = C1-10 alkyl, alkoxy, C2-10  
**alkenyl**; G1-5 = single bond, CH2CH2; A1 = 1,4 phenylene,  
trans 1,4 cyclohexylene; A2 = fluorene 1,4 phenylene, trans 1,4  
cyclohexylene. The compns. may also contain other cyclohexyl compds.  
given in Markush structures. Liq. crystal display devices comprising the  
above stated compns. are also claimed. The compns. have low viscosity and  
ideal  $\Delta n$  depending on the cell thickness.

ST fluorophenyl hydrocyan compound  
fluorophenyl hydrocyan blend

Should crystal distances

4-(4-fluorophenyl)-2-oxo-1,2,3,4-tetrahydropyridine-5-carboxylic acid, 100 mg, 0.3 mmole, for diazotization.

17. Liquid crystals  
energetic; difluorophenyl contg. tetrahydropyran combd. nematic liq.  
crystal mixts. for displays

[illegible]

ANSWER 1 P 14 PAR121 PAR121 L11 AC1  
 1111:4732 JAP121  
 134:155312  
 Liquid crystal compositions and liquid crystal displays with wide view  
 angle  
 Yanai, Motoki; Kubo, Yasuhiro; Nakagawa, Eisui  
 Chisso Corp., Japan  
 Cpn. Kokai Tokkyo Koho, 15 pp.  
 CCIEN: JYXNAF  
 Patent  
 Japanese  
 ICM C09K019 40  
 ICS C09K019 42; C19K019 46; C02F001 13  
 T4 13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes  
 Section cross reference s : 75

PATENT NO.	FILE DATE	APPL. DATE IN U.S.	DATE
JP 5333131.12	82	1982.09.10	1982.09.10
JP 5334164	81	1981.09.14	1981.09.14
JP 1999-206781	A	1999.09.01	
MAP PAT. 1341188312			



PATENT NO.	PIND	DATE	APPLICATION NO.	DATE
CP 2011019465	AL	20110113	CP 1989 102148	19900716
MARRPAT 134412461				

AB The liq. crystal compn. contains 14 stereog.1 compds. selected from I as the 1st component, 14 stereog.1 compds. selected from II and III as the 2nd component, and 14 stereog.1 compds. selected from IV, V, VI, VII, R1, R3, R5, R7, R9, R11, R13 = C1-10 alkyl; C1-10 **alkenyl**; R2, R4, R6, R8, R12, R14 = C1-10 alkyl; alkoxyl; C2-11 **alkenyl**; I1-I5 = direct bond, CH2CH2 as the 3rd component. The compn., having appropriate diffractive anisotropy, low viscosity, and wide nematic phase range, provides the liq. crystal display with wide view angle.

la crista).

memetic liq. cryst. compr. contg. component with neg. dielec.  
anisotropy for active matrix display device

operator: operator: f.p., dynt., comp., contg. comp. mem with neg. altered.  
 auxiliary for active matrix display device

[illegible][illegible][illegible]

Table 1. *Salmonella* serotypes and their associated diseases

Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group (C) and the experimental group (E). The control group (C) was divided into two subgroups: the control group (C) and the control group (C). The experimental group (E) was divided into two subgroups: the experimental group (E) and the experimental group (E). The control group (C) was divided into two subgroups: the control group (C) and the control group (C). The experimental group (E) was divided into two subgroups: the experimental group (E) and the experimental group (E).

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

IN Chulishi, Norinaka, Miyatake, Arai, Kuroda, Hanyu, Yoshida, Murakami, et al.  
Eunji

the 1990s, the number of people in the world who are under 15 years of age is expected to increase from 1.1 billion to 1.5 billion. The number of people aged 65 and over is expected to increase from 200 million to 400 million. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion.

[illegible]

1. *Chlorophyll a* (Chl *a*) and *Chlorophyll b* (Chl *b*) were determined by the method of Arar and Collins (1987).

1. *Chlorophyll a* (Chl *a*)

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Lichtenthal and Whistler (1973).

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

100

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

Figure 1 is a schematic representation of the experimental design. It shows a sequence of three events: 'Stimulus', 'Response', and 'Reward'. The 'Stimulus' event is represented by a face. The 'Response' event is represented by a button press. The 'Reward' event is represented by a coin. The sequence is labeled 'Stimulus', 'Response', and 'Reward'.

ST    liq crystal layer display cured acrylic polymer

17 Polymers, preparation.

PE: PNU (Preparation, unclassified) ; TEM: Technical or engineered material.  
use ; PREP: Preparation ; USES: Uses  
arom.; polymer and cured polymer thereof for liq. crystal layer of  
liq. crystal display device

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The number of transformed cells was determined by the number of colonies obtained on the selective medium. The results are the mean of three independent experiments. Error bars represent the standard deviation.

(polymer and cured polymer) thereof for liq. crystal layer of liq. crystal display device

237769-57-2P 237769-59-4P 237769-61-6P 237769-64-8P 237769-66-0P  
237769-57-2P 237769-59-4P 237769-61-6P 237769-63-0P  
237769-65-2P 237769-67-4P 237769-69-6P 237769-71-8P 237769-73-0P

RL: PNC Preparation, unclassified ; TEM: Technical or engineered material  
use ; PPER: Preparation ; USES: Uses

polymer and cured polymer (refractive index of crystal layer of 1.5, crystal diameter  $d_c/10\mu$ )

[illegible]

PLT	PCV	Red blood cell count	Hct	Red blood cell volume	Red blood cell mass
-----	-----	----------------------	-----	-----------------------	---------------------

polymer and metal polymer interface (Fig. 1). Opto. Appl. 13, 233 (1983).  
crystal display device.

Table 1. *Summary of the results of the 1997 survey of the 1000 most common species of plants, animals, and fungi in the British Isles. The table shows the number of species recorded in each of the 1000 most common species lists, the number of species recorded in each of the 1000 most common species lists, and the number of species recorded in each of the 1000 most common species lists.*

[illegible][illegible]





10 Fertilization, Various Aspects, See 10  
 11 Mammal Patent, 10-11, 12, 13, 14  
 12 Gen. Affen., 12-13  
 13 GEN.: 100000

1. **Introduction**  
 2. **Methodology**  
 3. **Results**  
 4. **Discussion**  
 5. **Conclusion**  
 6. **References**  
 7. **Appendix**  
 8. **Index**  
 9. **Table of Contents**  
 10. **Figure 1**  
 11. **Figure 2**  
 12. **Figure 3**  
 13. **Figure 4**  
 14. **Figure 5**  
 15. **Figure 6**  
 16. **Figure 7**  
 17. **Figure 8**  
 18. **Figure 9**  
 19. **Figure 10**  
 20. **Figure 11**  
 21. **Figure 12**  
 22. **Figure 13**  
 23. **Figure 14**  
 24. **Figure 15**  
 25. **Figure 16**  
 26. **Figure 17**  
 27. **Figure 18**  
 28. **Figure 19**  
 29. **Figure 20**  
 30. **Figure 21**  
 31. **Figure 22**  
 32. **Figure 23**  
 33. **Figure 24**  
 34. **Figure 25**  
 35. **Figure 26**  
 36. **Figure 27**  
 37. **Figure 28**  
 38. **Figure 29**  
 39. **Figure 30**  
 40. **Figure 31**  
 41. **Figure 32**  
 42. **Figure 33**  
 43. **Figure 34**  
 44. **Figure 35**  
 45. **Figure 36**  
 46. **Figure 37**  
 47. **Figure 38**  
 48. **Figure 39**  
 49. **Figure 40**  
 50. **Figure 41**  
 51. **Figure 42**  
 52. **Figure 43**  
 53. **Figure 44**  
 54. **Figure 45**  
 55. **Figure 46**  
 56. **Figure 47**  
 57. **Figure 48**  
 58. **Figure 49**  
 59. **Figure 50**  
 60. **Figure 51**  
 61. **Figure 52**  
 62. **Figure 53**  
 63. **Figure 54**  
 64. **Figure 55**  
 65. **Figure 56**  
 66. **Figure 57**  
 67. **Figure 58**  
 68. **Figure 59**  
 69. **Figure 60**  
 70. **Figure 61**  
 71. **Figure 62**  
 72. **Figure 63**  
 73. **Figure 64**  
 74. **Figure 65**  
 75. **Figure 66**  
 76. **Figure 67**  
 77. **Figure 68**  
 78. **Figure 69**  
 79. **Figure 70**  
 80. **Figure 71**  
 81. **Figure 72**  
 82. **Figure 73**  
 83. **Figure 74**  
 84. **Figure 75**  
 85. **Figure 76**  
 86. **Figure 77**  
 87. **Figure 78**  
 88. **Figure 79**  
 89. **Figure 80**  
 90. **Figure 81**  
 91. **Figure 82**  
 92. **Figure 83**  
 93. **Figure 84**  
 94. **Figure 85**  
 95. **Figure 86**  
 96. **Figure 87**  
 97. **Figure 88**  
 98. **Figure 89**  
 99. **Figure 90**  
 100. **Figure 91**  
 101. **Figure 92**  
 102. **Figure 93**  
 103. **Figure 94**  
 104. **Figure 95**  
 105. **Figure 96**  
 106. **Figure 97**  
 107. **Figure 98**  
 108. **Figure 99**  
 109. **Figure 100**  
 110. **Figure 101**  
 111. **Figure 102**  
 112. **Figure 103**  
 113. **Figure 104**  
 114. **Figure 105**  
 115. **Figure 106**  
 116. **Figure 107**  
 117. **Figure 108**  
 118. **Figure 109**  
 119. **Figure 110**  
 120. **Figure 111**  
 121. **Figure 112**  
 122. **Figure 113**  
 123. **Figure 114**  
 124. **Figure 115**  
 125. **Figure 116**  
 126. **Figure 117**  
 127. **Figure 118**  
 128. **Figure 119**  
 129. **Figure 120**  
 130. **Figure 121**  
 131. **Figure 122**  
 132. **Figure 123**  
 133. **Figure 124**  
 134. **Figure 125**  
 135. **Figure 126**  
 136. **Figure 127**  
 137. **Figure 128**  
 138. **Figure 129**  
 139. **Figure 130**  
 140. **Figure 131**  
 141. **Figure 132**  
 142. **Figure 133**  
 143. **Figure 134**  
 144. **Figure 135**  
 145. **Figure 136**  
 146. **Figure 137**  
 147. **Figure 138**  
 148. **Figure 139**  
 149. **Figure 140**  
 150. **Figure 141**  
 151. **Figure 142**  
 152. **Figure 143**  
 153. **Figure 144**  
 154. **Figure 145**  
 155. **Figure 146**  
 156. **Figure 147**  
 157. **Figure 148**  
 158. **Figure 149**  
 159. **Figure 150**  
 160. **Figure 151**  
 161. **Figure 152**  
 162. **Figure 153**  
 163. **Figure 154**  
 164. **Figure 155**  
 165. **Figure 156**  
 166. **Figure 157**  
 167. **Figure 158**  
 168. **Figure 159**  
 169. **Figure 160**  
 170. **Figure 161**  
 171. **Figure 162**  
 172. **Figure 163**  
 173. **Figure 164**  
 174. **Figure 165**  
 175. **Figure 166**  
 176. **Figure 167**  
 177. **Figure 168**  
 178. **Figure 169**  
 179. **Figure 170**  
 180. **Figure 171**  
 181. **Figure 172**  
 182. **Figure 173**  
 183. **Figure 174**  
 184. **Figure 175**  
 185. **Figure 176**  
 186. **Figure 177**  
 187. **Figure 178**  
 188. **Figure 179**  
 189. **Figure 180**  
 190. **Figure 181**  
 191. **Figure 182**  
 192. **Figure 183**  
 193. **Figure 184**  
 194. **Figure 185**  
 195. **Figure 186**  
 196. **Figure 187**  
 197. **Figure 188**  
 198. **Figure 189**  
 199. **Figure 190**  
 200. **Figure 191**  
 201. **Figure 192**  
 202. **Figure 193**  
 203. **Figure 194**  
 204. **Figure 195**  
 205. **Figure 196**  
 206. **Figure 197**  
 207. **Figure 198**  
 208. **Figure 199**  
 209. **Figure 200**  
 210. **Figure 201**  
 211. **Figure 202**  
 212. **Figure 203**  
 213. **Figure 204**  
 214. **Figure 205**  
 215. **Figure 206**  
 216. **Figure 207**  
 217. **Figure 208**

0	1	4	13	20	25	28	31	34	37	40	43	46	49	52	55	58	61	64	67	70	73	76	79	82	85	88	91	94	97	100
101	104	107	110	113	116	119	122	125	128	131	134	137	140	143	146	149	152	155	158	161	164	167	170	173	176	179	182	185	188	191
194	197	200	203	206	209	212	215	218	221	224	227	230	233	236	239	242	245	248	251	254	257	260	263	266	269	272	275	278	281	284
287	290	293	296	299	302	305	308	311	314	317	320	323	326	329	332	335	338	341	344	347	350	353	356	359	362	365	368	371	374	377
380	383	386	389	392	395	398	401	404	407	410	413	416	419	422	425	428	431	434	437	440	443	446	449	452	455	458	461	464	467	470
473	476	479	482	485	488	491	494	497	500	503	506	509	512	515	518	521	524	527	530	533	536	539	542	545	548	551	554	557	560	563
566	569	572	575	578	581	584	587	590	593	596	599	602	605	608	611	614	617	620	623	626	629	632	635	638	641	644	647	650	653	656
659	662	665	668	671	674	677	680	683	686	689	692	695	698	701	704	707	710	713	716	719	722	725	728	731	734	737	740	743	746	749
752	755	758	761	764	767	770	773	776	779	782	785	788	791	794	797	800	803	806	809	812	815	818	821	824	827	830	833	836	839	842
845	848	851	854	857	860	863	866	869	872	875	878	881	884	887	890	893	896	899	902	905	908	911	914	917	920	923	926	929	932	935
938	941	944	947	950	953	956	959	962	965	968	971	974	977	980	983	986	989	992	995	998	1001	1004	1007	1010	1013	1016	1019	1022	1025	1028

[illegible]

Parameter	Value	Unit	Source
Population size	1000	Individuals	Assumed
Initial frequency	0.5	Proportion	Assumed
Selection coefficient	0.1	Proportion	Assumed
Recombination rate	0.01	Proportion	Assumed
Migration rate	0.001	Proportion	Assumed
Time (generations)	1000	Generations	Assumed

[illegible]

THE DEPARTMENT OF THE ARMY

CS MAPPAH 100:10100

AB The title ligand is represented by a general formula R1 Ar1 R2W [W = CrPa; X = Cl, Br, I, OH, CH<sub>3</sub>CH<sub>2</sub>; Y = H, Cl, Br, alkyl], **alkenyl**, etc.; R<sub>a</sub> = Cl, Br, alkyl; R<sub>1</sub> = H, Cl, Br, alkyl, **alkenyl**; R<sub>2</sub>, R<sub>3</sub> = trans-1,4-cyclohexylene, 1,4-cyclohexenylene, 1,4-phenylene, etc.; R<sub>4</sub> = OCH<sub>3</sub>, OCH<sub>2</sub>CH<sub>3</sub>, CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, 4,4'-biphenyl, 4,4'-biphenylene, 4,4'-biphenylene, etc.; n = 0-31.

of chiral dopant in chiral droplets.

- liquid crystal displays
- chiral dopant for liq. crystal display

## II. Liquid crystals

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

PL: MOA (modifier or additive use): SMN (inhibits preparation): SMN  
Preparation: COPS (COPS)

# THE UNIVERSITY OF CHICAGO

...prev. of ...

[illegible]

207448-43-9P 207448-44-0P 207448-45-1P

207448-46-2P 207448-47-3P 207448-48-4P

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87													

PL: GPU support is provided by NVIDIA's CUDA [10].

10. *Journal of the American Medical Association*, 1997; 277: 1025-1030.

[illegible]



[illegible]

192722-03-5

[illegible]

DN 125:349711

[illegible]

PA Shin-Etsu Chemical Co., Ltd., Japan

50 Eur. Pat. App. No. 11, 111, 112.

CODEN: EPXNDW

DT Patent

LA English

IC ICM C09K019 40

CC 74-13 Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes\*

Section cross reference as follows:

[illegible]

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 755161	A1	19970410	EP 1996 000477	19961210
FR 9606977	GR			
JP 09165977	A2	19970630	JP 1996 272040	19961216
US 5980778	A	19991109	US 1996 132612	19961216
SP 1995 255243		19951216		

REPORT OF THE COMMISSIONER OF THE GENERAL LAND OFFICE

34

[illegible]

AB The invention presents an excellent liq. crystal display comp. comprising a neg. dielect. anisotropy, comprising one or more compounds represented by the formulas I-IV where R1 is alkyl, alkoxyalkyl, min. or dialkyl, dialkoxy, or **alkenyl**, with each group having 1 to 7 carbon atoms; all of R2 and R3 denoting a hydrogen atom; the n1 + n2 + n3 + n4 + n5 + n6 + n7 + n8 + n9 + n10 + n11 + n12 + n13 + n14 + n15 + n16 + n17 + n18 + n19 + n20 + n21 + n22 + n23 + n24 + n25 + n26 + n27 + n28 + n29 + n30 + n31 + n32 + n33 + n34 + n35 + n36 + n37 + n38 + n39 + n40 + n41 + n42 + n43 + n44 + n45 + n46 + n47 + n48 + n49 + n50 + n51 + n52 + n53 + n54 + n55 + n56 + n57 + n58 + n59 + n60 + n61 + n62 + n63 + n64 + n65 + n66 + n67 + n68 + n69 + n70 + n71 + n72 + n73 + n74 + n75 + n76 + n77 + n78 + n79 + n80 + n81 + n82 + n83 + n84 + n85 + n86 + n87 + n88 + n89 + n90 + n91 + n92 + n93 + n94 + n95 + n96 + n97 + n98 + n99 + n100 + n101 + n102 + n103 + n104 + n105 + n106 + n107 + n108 + n109 + n110 + n111 + n112 + n113 + n114 + n115 + n116 + n117 + n118 + n119 + n120 + n121 + n122 + n123 + n124 + n125 + n126 + n127 + n128 + n129 + n130 + n131 + n132 + n133 + n134 + n135 + n136 + n137 + n138 + n139 + n140 + n141 + n142 + n143 + n144 + n145 + n146 + n147 + n148 + n149 + n150 + n151 + n152 + n153 + n154 + n155 + n156 + n157 + n158 + n159 + n160 + n161 + n162 + n163 + n164 + n165 + n166 + n167 + n168 + n169 + n170 + n171 + n172 + n173 + n174 + n175 + n176 + n177 + n178 + n179 + n180 + n181 + n182 + n183 + n184 + n185 + n186 + n187 + n188 + n189 + n190 + n191 + n192 + n193 + n194 + n195 + n196 + n197 + n198 + n199 + n200 + n201 + n202 + n203 + n204 + n205 + n206 + n207 + n208 + n209 + n210 + n211 + n212 + n213 + n214 + n215 + n216 + n217 + n218 + n219 + n220 + n221 + n222 + n223 + n224 + n225 + n226 + n227 + n228 + n229 + n230 + n231 + n232 + n233 + n234 + n235 + n236 + n237 + n238 + n239 + n240 + n241 + n242 + n243 + n244 + n245 + n246 + n247 + n248 + n249 + n250 + n251 + n252 + n253 + n254 + n255 + n256 + n257 + n258 + n259 + n260 + n261 + n262 + n263 + n264 + n265 + n266 + n267 + n268 + n269 + n270 + n271 + n272 + n273 + n274 + n275 + n276 + n277 + n278 + n279 + n280 + n281 + n282 + n283 + n284 + n285 + n286 + n287 + n288 + n289 + n290 + n291 + n292 + n293 + n294 + n295 + n296 + n297 + n298 + n299 + n300 + n301 + n302 + n303 + n304 + n305 + n306 + n307 + n308 + n309 + n310 + n311 + n312 + n313 + n314 + n315 + n316 + n317 + n318 + n319 + n320 + n321 + n322 + n323 + n324 + n325 + n326 + n327 + n328 + n329 + n330 + n331 + n332 + n333 + n334 + n335 + n336 + n337 + n338 + n339 + n340 + n341 + n342 + n343 + n344 + n345 + n346 + n347 + n348 + n349 + n350 + n351 + n352 + n353 + n354 + n355 + n356 + n357 + n358 + n359 + n360 + n361 + n362 + n363 + n364 + n365 + n366 + n367 + n368 + n369 + n370 + n371 + n372 + n373 + n374 + n375 + n376 + n377 + n378 + n379 + n380 + n381 + n382 + n383 + n384 + n385 + n386 + n387 + n388 + n389 + n390 + n391 + n392 + n393 + n394 + n395 + n396 + n397 + n398 + n399 + n400 + n401 + n402 + n403 + n404 + n405 + n406 + n407 + n408 + n409 + n410 + n411 + n412 + n413 + n414 + n415 + n416 + n417 + n418 + n419 + n420 + n421 + n422 + n423 + n424 + n425 + n426 + n427 + n428 + n429 + n430 + n431 + n432 + n433 + n434 + n435 + n436 + n437 + n438 + n439 + n440 + n441 + n442 + n443 + n444 + n445 + n446 + n447 + n448 + n449 + n450 + n451 + n452 + n453 + n454 + n455 + n456 + n457 + n458 + n459 + n460 + n461 + n462 + n463 + n464 + n465 + n466 + n467 + n468 + n469 + n470 + n471 + n472 + n473 + n474 + n475 + n476 + n477 + n478 + n479 + n480 + n481 + n482 + n483 + n484 + n485 + n486 + n487 + n488 + n489 + n490 + n491 + n492 + n493 + n494 + n495 + n496 + n497 + n498 + n499 + n500 + n501 + n502 + n503 + n504 + n505 + n506 + n507 + n508 + n509 + n510 + n511 + n512 + n513 + n514 + n515 + n516 + n517 + n518 + n519 + n520 + n521 + n522 + n523 + n524 + n525 + n526 + n527 + n528 + n529 + n530 + n531 + n532 + n533 + n534 + n535 + n536 + n537 + n538 + n539 + n540 + n541 + n542 + n543 + n544 + n545 + n546 + n547 + n548 + n549 + n550 + n551 + n552 + n553 + n554 + n555 + n556 + n557 + n558 + n559 + n560 + n561 + n562 + n563 + n564 + n565 + n566 + n567 + n568 + n569 + n570 + n571 + n572 + n573 + n574 + n575 + n576 + n577 + n578 + n579 + n580 + n581 + n582 + n583 + n584 + n585 + n586 + n587 + n588 + n589 + n590 + n591 + n592 + n593 + n594 + n595 + n596 + n597 + n598 + n599 + n600 + n601 + n602 + n603 + n604 + n605 + n606 + n607 + n608 + n609 + n610 + n611 + n612 + n613 + n614 + n615 + n616 + n617 + n618 + n619 + n620 + n621 + n622 + n623 + n624 + n625 + n626 + n627 + n628 + n629 + n630 + n631 + n632 + n633 + n634 + n635 + n636 + n637 + n638 + n639 + n640 + n641 + n642 + n643 + n644 + n645 + n646 + n647 + n648 + n649 + n650 + n651 + n652 + n653 + n654 + n655 + n656 + n657 + n658 + n659 + n660 + n661 + n662 + n663 + n664 + n665 + n666 + n667 + n668 + n669 + n670 + n671 + n672 + n673 + n674 + n675 + n676 + n677 + n678 + n679 + n680 + n681 + n682 + n683 + n684 + n685 + n686 + n687 + n688 + n689 + n690 + n691 + n692 + n693 + n694 + n695 + n696 + n697 + n698 + n699 + n700 + n701 + n702 + n703 + n704 + n705 + n706 + n707 + n708 + n709 + n710 + n711 + n712 + n713 + n714 + n715 + n716 + n717 + n718 + n719 + n720 + n721 + n722 + n723 + n724 + n725 + n726 + n727 + n728 + n729 + n730 + n731 + n732 + n733 + n734 + n735 + n736 + n737 + n738 + n739 + n740 + n741 + n742 + n743 + n744 + n745 + n746 + n747 + n748 + n749 + n750 + n751 + n752 + n753 + n754 + n755 + n756 + n757 + n758 + n759 + n760 + n761 + n762 + n763 + n764 + n765 + n766 + n767 + n768 + n769 + n770 + n771 + n772 + n773 + n774 + n775 + n776 + n777 + n778 + n779 + n780 + n781 + n782 + n783 + n784 + n785 + n786 + n787 + n788 + n789 + n790 + n791 + n792 + n793 + n794 + n795 + n796 + n797 + n798 + n799 + n800 + n801 + n802 + n803 + n804 + n805 + n806 + n807 + n808 + n809 + n810 + n811 + n812 + n813 + n814 + n815 + n816 + n817 + n818 + n819 + n820 + n821 +

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

1. The first step is to identify the problem. In this case, the problem is that the company is not meeting its sales targets.

[illegible]

FAN.CNT 1

alkenyl











37 display electrooptical liq. crystal. film comprising typ. hexane deriv.  
IT liquid crystals

IT fluoro-biphenylcyclohexane derivs.  
IT optical imaging devices  
electrooptical liq. crystal, using fluoro-biphenylcyclohexane  
deriv. comp. media

IT 144813 84 8 144833-57-8 144902-15-8 144912 17 1  
144912 17 1 144919 84 4

PL: PPP Properties

liq. crystal media

IT 76802 89 0 76812 81 4 76719 85 6 71111 13 9 82812 87 3  
84816 86 8 85812 89 0 112714 93 0 118174 98 3 116349 49 9  
107215 66 7 107215 67 8 118164 91 5 111219 88 0 111746 78 7  
130746 77 9 131746 79 1 131739 11 6 133914 49 5 133917 71 1  
134149 97 6 134412 17 2 137019 95 5 137813 17 6 139191 32 6  
139215 82 0 139215 83 1 139345 94 5 141111 17 1 144505-14-6

144505-15-7 144505-16-8 144515 17 8

PL: PPP Properties

liq. crystal media renty.

LS ANSWER 14 IF 14 CARLUS COPYRIGHT 1987 AND

AN 1981:66887 CARLUS

DN 112:66887

TI 2,3-Difluorobiphenyls, their preparation, and liquid-crystal phases and  
display devices containing them

IN Reiffenrath, Volker; Krause, Joachim; Waechtle, Andreas; Weber, Georg;  
Finkenzeller, Ulrich; Coates, David; Sage, Ian Charles; Greenfield, Simon;  
Gray, George William; et al.

PA Merck Patent G.m.b.H., Fed. Rep. Ger.

SO Ger. Offen., 8 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C07C043 225

ICS C07C025 18; C07C169 78; C07C069 94; C19H019 31; C19H019 11;

C02F001 13

CC 74 13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Peptographic Processes)

Section Cross Reference 3 : 14, 15, 16, 18, 19

FANLONT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3807861	A1	19890321	DE 1988 3807861	19880310
	WO 8908987	A1	19890321	WO 1989 EP187	19890327

W: JP, FR, US

FW: AT, BE, CH, DE, FR, GB, IT, NL, SE

EP	342318	A1	19901411	EP 1988 342318	19881117
----	--------	----	----------	----------------	----------

EP	342318	B1	19910514		
----	--------	----	----------	--	--

P: CH, DE, FR, GB, IT, NL

JP	C0801441	T1	19901116	JP 1988 342318	19881117
----	----------	----	----------	----------------	----------

JP	2764131	B2	19910111		
----	---------	----	----------	--	--

US	5214117	A	19930402	US 1988 342318	19881117
----	---------	---	----------	----------------	----------

FPAT: DE 1988 3807861 19891117

WO 1989 EP187 19890327

OS MARPAT 112:66887

AB 4 (1) 4' (3) difluorobiphenyls, where 3' (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30) (31) (32) (33) (34) (35) (36) (37) (38) (39) (40) (41) (42) (43) (44) (45) (46) (47) (48) (49) (50) (51) (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73) (74) (75) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100) (101) (102) (103) (104) (105) (106) (107) (108) (109) (110) (111) (112) (113) (114) (115) (116) (117) (118) (119) (120) (121) (122) (123) (124) (125) (126) (127) (128) (129) (130) (131) (132) (133) (134) (135) (136) (137) (138) (139) (140) (141) (142) (143) (144) (145) (146) (147) (148) (149) (150) (151) (152) (153) (154) (155) (156) (157) (158) (159) (160) (161) (162) (163) (164) (165) (166) (167) (168) (169) (170) (171) (172) (173) (174) (175) (176) (177) (178) (179) (180) (181) (182) (183) (184) (185) (186) (187) (188) (189) (190) (191) (192) (193) (194) (195) (196) (197) (198) (199) (200) (201) (202) (203) (204) (205) (206) (207) (208) (209) (210) (211) (212) (213) (214) (215) (216) (217) (218) (219) (220) (221) (222) (223) (224) (225) (226) (227) (228) (229) (230) (231) (232) (233) (234) (235) (236) (237) (238) (239) (240) (241) (242) (243) (244) (245) (246) (247) (248) (249) (250) (251) (252) (253) (254) (255) (256) (257) (258) (259) (260) (261) (262) (263) (264) (265) (266) (267) (268) (269) (270) (271) (272) (273) (274) (275) (276) (277) (278) (279) (280) (281) (282) (283) (284) (285) (286) (287) (288) (289) (290) (291) (292) (293) (294) (295) (296) (297) (298) (299) (300) (301) (302) (303) (304) (305) (306) (307) (308) (309) (310) (311) (312) (313) (314) (315) (316) (317) (318) (319) (320) (321) (322) (323) (324) (325) (326) (327) (328) (329) (330) (331) (332) (333) (334) (335) (336) (337) (338) (339) (340) (341) (342) (343) (344) (345) (346) (347) (348) (349) (350) (351) (352) (353) (354) (355) (356) (357) (358) (359) (360) (361) (362) (363) (364) (365) (366) (367) (368) (369) (370) (371) (372) (373) (374) (375) (376) (377) (378) (379) (380) (381) (382) (383) (384) (385) (386) (387) (388) (389) (390) (391) (392) (393) (394) (395) (396) (397) (398) (399) (400) (401) (402) (403) (404) (405) (406) (407) (408) (409) (410) (411) (412) (413) (414) (415) (416) (417) (418) (419) (420) (421) (422) (423) (424) (425) (426) (427) (428) (429) (430) (431) (432) (433) (434) (435) (436) (437) (438) (439) (440) (441) (442) (443) (444) (445) (446) (447) (448) (449) (450) (451) (452) (453) (454) (455) (456) (457) (458) (459) (460) (461) (462) (463) (464) (465) (466) (467) (468) (469) (470) (471) (472) (473) (474) (475) (476) (477) (478) (479) (480) (481) (482) (483) (484) (485) (486) (487) (488) (489) (490) (491) (492) (493) (494) (495) (496) (497) (498) (499) (500) (501) (502) (503) (504) (505) (506) (507) (508) (509) (510) (511) (512) (513) (514) (515) (516) (517) (518) (519) (520) (521) (522) (523) (524) (525) (526) (527) (528) (529) (530) (531) (532) (533) (534) (535) (536) (537) (538) (539) (540) (541) (542) (543) (544) (545) (546) (547) (548) (549) (550) (551) (552) (553) (554) (555) (556) (557) (558) (559) (560) (561) (562) (563) (564) (565) (566) (567) (568) (569) (570) (571) (572) (573) (574) (575) (576) (577) (578) (579) (580) (581) (582) (583) (584) (585) (586) (587) (588) (589) (590) (591) (592) (593) (594) (595) (596) (597) (598) (599) (600) (601) (602) (603) (604) (605) (606) (607) (608) (609) (610) (611) (612) (613) (614) (615) (616) (617) (618) (619) (620) (621) (622) (623) (624) (625) (626) (627) (628) (629) (630) (631) (632) (633) (634) (635) (636) (637) (638) (639) (640) (641) (642) (643) (644) (645) (646) (647) (648) (649) (650) (651) (652) (653) (654) (655) (656) (657) (658) (659) (660) (661) (662) (663) (664) (665) (666) (667) (668) (669) (670) (671) (672) (673) (674) (675) (676) (677) (678) (679) (680) (681) (682) (683) (684) (685) (686) (687) (688) (689) (690) (691) (692) (693) (694) (695) (696) (697) (698) (699) (700) (701) (702) (703) (704) (705) (706) (707) (708) (709) (710) (711) (712) (713) (714) (715) (716) (717) (718) (719) (720) (721) (722) (723) (724) (725) (726) (727) (728) (729) (730) (731) (732) (733) (734) (735) (736) (737) (738) (739) (740) (741) (742) (743) (744) (745) (746) (747) (748) (749) (750) (751) (752) (753) (754) (755) (756) (757) (758) (759) (760) (761) (762) (763) (764) (765) (766) (767) (768) (769) (770) (771) (772) (773) (774) (775) (776) (777) (778) (779) (780) (781) (782) (783) (784) (785) (786) (787) (788) (789) (790) (791) (792) (793) (794) (795) (796) (797) (798) (799) (800) (801) (802) (803) (804) (805) (806) (807) (808) (809) (810) (811) (812) (813) (814) (815) (816) (817) (818) (819) (820) (821) (822) (823) (824) (825) (826) (827) (828) (829) (830) (831) (832) (833) (834) (835) (836) (837) (838) (839) (840) (841) (842) (843) (844) (845) (846) (847) (848) (849) (850) (851) (852) (853) (854) (855) (856) (857) (858) (859) (860) (861) (862) (863) (864) (865) (866) (867) (868) (869) (870) (871) (872) (873) (874) (875) (876) (877) (878) (879) (880) (881) (882) (883) (884) (885) (886) (887) (888) (889) (890) (891) (892) (893) (894) (895) (896) (897) (898) (899) (900) (901) (902) (903) (904) (905) (906) (907) (908) (909) (910) (911) (912) (913) (914) (915) (916) (917) (918) (919) (920) (921) (922) (923) (924) (925) (926) (927) (928) (929) (930) (931) (932) (933) (934) (935) (936) (937) (938) (939) (940) (941) (942) (943) (944) (945) (946) (947) (948) (949) (950) (951) (952) (953) (954) (955) (956) (957) (958) (959) (960) (961) (962) (963) (964) (965) (966) (967) (968) (969) (970) (971) (972) (973) (974) (975) (976) (977) (978) (979) (980) (981) (982) (983) (984) (985) (986) (987) (988) (989) (990) (991) (992) (993) (994) (995) (996) (997) (998) (999) (1000) (1001) (1002) (1003) (1004) (1005) (1006) (1007) (1008) (1009) (1010) (1011) (1012) (1013) (1014) (1015) (1016) (1017) (1018) (1019) (1020) (1021) (1022) (1023) (1024) (1025) (1026) (1027) (1028) (1029) (1030) (1031) (1032) (1033) (1034) (1035) (1036) (1037) (1038) (1039) (1040) (1041) (1042) (1043) (1044) (1045) (1046) (1047) (1048) (1049) (1050) (1051) (1052) (1053) (1054) (1055) (1056) (1057) (1058) (1059) (1060) (1061) (1062) (1063) (1064) (1065) (1066) (1067) (1068) (1069) (1070) (1071) (1072) (1073) (1074) (1075) (1076) (1077) (1078) (1079) (1080) (1081) (1082) (1083) (1084) (1085) (1086) (1087) (1088) (1089) (1090) (1091) (1092) (1093) (1094) (1095) (1096) (1097) (1098) (1099) (1100) (1101) (1102) (1103) (1104) (1105) (1106) (1107) (1108) (1109) (1110) (1111) (1112) (1113) (1114) (1115) (1116) (1117) (1118) (1119) (1120) (1121) (1122) (1123) (1124) (1125) (1126) (1127) (1128) (1129) (1130) (1131) (1132) (1133) (1134) (1135) (1136) (1137) (1138) (1139) (1140) (1141) (1142) (1143) (1144) (1145) (1146) (1147) (1148) (1149) (1150) (1151) (1152) (1153) (1154) (1155) (1156) (1157) (1158) (1159) (1160) (1161) (1162) (1163) (1164) (1165) (1166) (1167) (1168) (1169) (1170) (1171) (1172) (1173) (1174) (1175) (1176) (1177) (1178) (1179) (1180) (1181) (1182) (1183) (1184) (1185) (1186) (1187) (1188) (1189) (1190) (1191) (1192) (1193) (1194) (1195) (1196) (1197) (1198) (1199) (1200) (1201) (1202) (1203) (1204) (1205) (1206) (1207) (1208) (1209) (1210) (1211) (1212) (1213) (1214) (1215) (1216) (1217) (1218) (1219) (1220) (1221) (1222) (1223) (1224) (1225) (1226) (1227) (1228) (1229) (1230) (1231) (1232) (1233) (1234) (1235) (1236) (1237) (1238) (1239) (1240) (1241) (1242) (1243) (1244) (1245) (1246) (1247) (1248) (1249) (1250) (1251) (1252) (1253) (1254) (1255) (1256) (1257) (1258) (1259) (1260) (1261) (1262) (1263) (1264) (1265) (1266) (1267) (1268) (1269) (1270) (1271) (1272) (1273) (1274) (1275) (1276) (1277) (1278) (1279) (1280) (1281) (1282) (1283) (1284) (1285) (1286) (1287) (1288) (1289) (1290) (1291) (1292) (1293) (1294) (1295) (1296) (1297) (1298) (1299) (1300) (1301) (1302) (1303) (1304) (1305) (1306) (1307) (1308) (1309) (1310) (1311) (1312) (1313) (1314) (1315) (1316) (1317) (1318) (1319) (1320) (1321) (1322) (1323) (1324) (1325) (1326) (1327) (1328) (1329) (1330) (1331) (1332) (1333) (1334) (1335) (1336) (1337) (1338) (1339) (1340) (1341) (1342) (1343) (1344) (1345) (1346) (1347) (1348) (1349) (1350) (1351) (1352) (1353) (1354) (1355) (1356) (1357) (1358) (1359) (1360) (1361) (1362) (1363) (1364) (1365) (1366) (1367) (1368) (1369) (1370) (1371) (1372) (1373) (1374) (1375) (1376) (1377) (1378) (1379) (1380) (1381) (1382) (1383) (1384) (1385) (1386) (1387) (1388) (1389) (1390) (1391) (1392) (1393) (1394) (1395) (1396) (1397) (1398) (1399) (1400) (1401) (1402) (1403) (1404) (1405) (1406) (1407) (1408) (1409) (1410) (1411) (1412) (1413) (1414) (1415) (1416) (1417) (1418) (1419) (1420) (1421) (1422) (1423) (1424) (1425) (1426) (1427) (1428) (1429) (1430) (1431) (1432) (1433) (1434) (1435) (1436) (1437) (1438) (1439) (1440) (1441) (1442) (1443) (1444) (1445) (1446) (1447) (1448) (1449) (1450) (1451) (1452) (1453) (1454) (1455) (1456) (1457) (1458) (1459) (1460) (1461) (1462) (1463) (1464) (1465) (1466) (1467) (1468) (1469) (1470) (1471) (1472) (1473) (1474) (1475) (1476) (1477) (1478) (1479) (1480) (1481) (1482) (1483) (1484) (1485) (1486) (1487) (1488) (1489) (1490) (1491) (1492) (1493) (1494) (1495) (1496) (1497) (1498) (1499) (1500) (1501) (1502) (1503) (1504) (1505) (1506) (1507) (1508) (1509) (1510) (1511) (1512) (1513) (1514) (1515) (1516) (1517) (1518) (1519) (1520) (1521) (1522) (1523) (1524) (1525) (1526) (1527) (1528) (1529) (1530) (1531) (1532) (1533) (1534) (1535) (1536) (1537) (1538) (1539) (1540) (1541) (1542) (1543) (1544) (1545) (1546) (1547) (1548) (1549) (1550) (1551) (1552) (1553) (1554) (1555) (1556) (1557) (1558) (1559) (1560) (1561) (1562) (1563) (1564) (1565) (1566) (1567) (1568) (1569) (1570) (1571) (1572) (1573) (1574) (1575) (1576) (1577) (1578) (1579) (1580) (1581) (1582) (1583) (1584) (1585) (1586) (1587) (1588) (1589) (1590) (1591) (1592) (1593) (1594) (1595) (1596) (1597) (1598) (1599) (1600) (1601) (1602) (1603) (1604) (1605) (1606) (1607) (1608) (1609) (1610) (1611) (1612) (1613) (1614) (1615) (1616) (1617) (1618) (1619) (1620) (1621) (1622) (1623) (1624) (1625) (1626) (1627) (1628) (1629) (1630) (1631) (1632) (1633) (1634) (1635) (1636) (1637) (1638) (1639) (1640) (1641) (1642) (1643) (1644) (1645) (1646) (1647) (1648) (1649) (1650) (1651) (1652) (1653) (1654) (1655) (1656) (1657) (1658) (1659) (1660) (1661) (1662) (1663) (1664) (1665) (1666) (1667) (1668) (1669) (1670) (1671) (1672) (1673) (1674) (1675) (1676) (1677) (1678) (1679) (1680) (1681) (1682) (1683) (1684) (1685) (1686) (1687) (1688) (1689) (1690) (1691) (1692) (1693) (1694) (1695) (1696) (1697) (1698) (1699) (1700) (1701) (1702) (1703) (1704) (1705) (1706) (1707) (1708) (1709) (1710) (1711) (1712) (1713) (1714) (1715) (1716) (1717) (1718) (1719) (1720) (1721) (1722) (1723) (1724) (1725) (1726) (1727) (1728) (1729) (1730) (1731) (1732) (1733) (1734) (1735) (1736) (1737) (1738) (1739) (1740) (1741) (1742) (1743) (1744) (1745) (1746) (1747) (1748) (1749) (1750) (1751) (1752) (1753) (1754) (1755) (1756) (1757) (1758) (1759) (1760) (1761) (1762) (1763) (1764) (1765) (1766) (1767) (1768) (1769) (1770) (1771) (1772) (1773) (1774) (1775) (1776) (1777) (1778) (1779) (1780) (1781) (1782) (1783) (1784) (1785) (1786) (1787) (1788) (1789) (1790) (1791) (1792) (1793) (1

replaced by 1,1'-Alkyl-4,4'-biphenyl-4,4'-diyl derivatives for prep. of liq. crystal phases.

IT flatbiphenyl series; alk crystals; alk crystals; alkyl biphenyl series; display liq crystal; alkylbiphenyl series

IT liquid crystals

alkylbiphenyl series

IT Optical Imaging Devices

Electro- & liq. crystal; alkylbiphenyl series; alkyl

IT 11201-89-4 11204-91-1 11204-91-2 11208-84-5 11285-82-1  
 11288-85-5 11289-71-1 11291-81-5 11291-81-6 11299-91-2  
 113115-81-2 113115-82-3 113581-81-2 113581-79-4 113548-19-6  
 113248-37-6 114088-71-1 124728-48-9 114728-51-4  
 124728-67-0 124728-68-3 124728-69-4 124728-70-7  
 124761-39-3  
 RL: USES Uses

liq. crystal phases; reagent for display devices

IT 124728-40-7 124728-43-8 124728-44-9 124728-45-1 124728-46-1  
 RL: PCT Reagent; SYN Synthesis; preparation; PREP Preparation

prepn. and reaction of, in formation of liq. crystal

IT 123412-06-1 123581-73-8 123581-74-9 123591-81-7  
 123683-29-4 124471-56-1 124728-49-1 124728-50-3  
 124728-52-5 124728-53-6 124728-54-7 124728-55-8 124728-56-9  
 124728-57-0 124728-58-1 124728-59-2 124728-60-3 124728-61-4  
 124761-38-2  
 RL: PREP Preparation

prepn. of, for liq.-crystal phases for display devices